PENDING CLAIMS:

This listing of claims replaces all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (Previously presented) A stator assembly comprising:

a plurality of stator coil assemblies; and

a stator coil support structure, substantially the entire stator coil support structure constructed of a non-magnetic, thermally-conductive material, said stator coil support structure including:

a plurality of channels, each said channel being configured to receive one or more of said stator coil assemblies, said stator coil support defining an axial passage, about which said plurality of channels are radially positioned, for receiving a rotor assembly and configured to transfer heat from the stator coil assemblies.

2. (Original) The stator assembly of claim 1 wherein each said stator coil assembly is surrounded by a ground plane assembly.

3. (Original) The stator assembly of claim 1 further comprising a magnetic annular assembly surrounding said stator coil support structure, wherein said magnetic annular assembly includes a plurality of axial coolant passages.

4. (Original) The stator assembly of claim 3 further comprising a coolant circulation system for circulating a cooling liquid through said axial coolant passages.

5. (Original) The stator assembly of claim 1 wherein said non-magnetic, thermally conductive material is a sheet material, said sheet material being laminated to form said stator coil support structure.

6. (Original) The stator assembly of claim 5 wherein said sheet material is a polymer-based adhesive.

7. (Original) The stator assembly of claim 5 wherein said sheet material a graphite-based material.

8. (Original) The stator assembly of claim 1 further comprising an epoxy filler disposed between said stator coil assemblies and said stator coil support structure.

9. (Previously presented) A superconducting rotating machine comprising:

a stator assembly including a plurality of stator coil assemblies, and a stator coil support structure, substantially the entire stator coil support structure constructed of a non-magnetic, thermally-conductive material, said stator coil support structure including: a plurality of channels, each said channel being configured to receive one or more of said stator coil assemblies, said stator coil support defining an axial passage, about which said plurality of channels are radially positioned, and configured to transfer heat from the stator coil assemblies; and

a rotor assembly disposed within the axial passage and configured to rotate within said stator assembly, said rotor assembly including an axial shaft, and at least one superconducting rotor winding assembly.

10. (Original) The superconducting rotating machine of claim 9 wherein each said stator coil assembly is surrounded by a ground plane assembly.

11. (Original) The superconducting rotating machine of claim 9 wherein said stator assembly further includes a magnetic annular assembly surrounding said stator coil support structure, wherein said magnetic annular assembly includes a plurality of axial coolant passages.

12. (Original) The superconducting rotating machine of claim 11 further comprising a coolant circulation system for circulating a cooling liquid through said axial coolant passages.

13. (Original) The superconducting rotating machine of claim 9 wherein said non-magnetic, thermally conductive material is a sheet material, said sheet material being laminated to form said stator coil support structure.

14. (Original) The superconducting rotating machine of claim 13 wherein said sheet material is a polymer-based adhesive.

15. (Original) The superconducting rotating machine of claim 13 wherein said sheet material is a graphite-based material.

16. (Original) The superconducting rotating machine of claim 9 further comprising an epoxy filler disposed between said stator coil assemblies and said stator coil support structure.

17. (Original) The superconducting rotating machine of claim 9 wherein said at least one superconducting rotor winding assembly is constructed using a high-temperature, superconducting material.

18. (Original) The superconducting rotating machine of claim 17 wherein said high temperature, superconducting material is chosen from the group consisting of: thallium-barium-calcium-copper-oxide; bismuth-strontium-calcium-copper-oxide; mercury-barium-calcium-copper-oxide; and yttrium-barium-copper-oxide.

19. (Original) The superconducting rotating machine of claim 9 further comprising a refrigeration system for cooling said at least one superconducting rotor winding assembly.

20-29. (Cancelled).

30. (Previously presented) A stator assembly comprising:

a plurality of stator coil assemblies; a magnetic annular assembly; and

a stator coil support structure, the magnetic annular assembly surrounding the stator coil support structure, the stator coil support structure including:

a non-magnetic, thermally-conductive ring section; and

a plurality of non-magnetic, thermally-conductive heat sinking members positioned radially about said ring section, thus forming a plurality of channels, each being configured to receive one or more of said stator coil assemblies, said plurality of non-magnetic, thermally-conductive heat sinking members, in aggregate, defining an axial passage for receiving a rotor assembly and configured to transfer heat from the stator coil assemblies.

31. (Original) The stator assembly of claim 30 wherein said magnetic annular assembly includes a plurality of axial coolant passages.

32. (Original) The stator assembly of claim 31 further comprising a coolant circulation system for circulating a cooling liquid through said axial coolant passages.

33. (Original) The stator assembly of claim 30 wherein said non-magnetic, thermally-conductive heat sinking members are constructed of a non-magnetic, thermally conductive sheet material, wherein said sheet material is laminated to form said non-magnetic, thermally-conductive heat sinking members.

34. (Original) The stator assembly of claim 33 wherein said sheet material is a polymer-based adhesive.

35. (Original) The stator assembly of claim 33 wherein said sheet material a graphite-based material.

36. (Original) The stator assembly of claim 30 further comprising an epoxy filler disposed between said stator coil assemblies and said non-magnetic, thermally-conductive heat sinking members.

37-41. (Cancelled).